A NEW FOSSIL *RADIOCENTRUM* (PULMONATA: OREOHELICIDAE) FROM NORTHERN COAHUILA, MEXICO

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ABSTRACT

A new species of oreohelicid land snail, Radiocentrum orientalis, *is described from the Serranias del Burro, a mountain range of northern Coahuila, Mexico. Specimens are fossils from probable Pleistocene deposits. This is the easternmost record of the genus. Distribution of the genus in Mexico is discussed.*

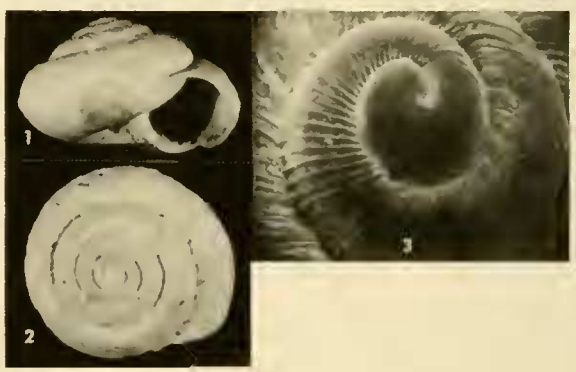
Recognition of the taxon *Radiocentrum* as a separate genus in the family Oreohelicidae was recommended by Babrakzai, Miller and Ward (1975) and was followed by Christensen and Miller (1976). Formerly *Radiocentrum* had been considered a subgenus of *Oreohelix.*

The present species is described from fossil shells, probably of Pleistocene age (judging by the massive canyon fill in which they occur and the nature of the associated molluscan fauna). Specimens were collected on an expedition arranged by Mr. David H. Riskind, Texas Parks and Wildlife Department, and Mr. Robert Burleson, Temple, Texas, to whom I am indebted.

Radiocentrum orientalis *n. sp.*
(Figs. 1-3)

Diagnosis: Although poorly preserved, specimens of this species exhibit (1) the riblets (Fig. 3) that are characteristic of the embryonic whorls of *Radiocentrum* and (2) the narrower, more deeply impressed early whorls (Fig. 2) of that genus as contrasted with *Oreohelix.* It differs from most species of *Radiocentrum* in possessing an elevated spire, a characteristic found, elsewhere, only in species of the Chiricahua Mountains, Arizona. However, kinds described from the Chiricahua Mountains are variously wider, thinner-shelled, more carinate or bear spiral striae, in contrast to the species described here.

Description of Holotype: Fossil shell, heavy (thick-walled), 11.8 mm in diameter and 7.9 mm high, elevated, with spire forming angle of 123°, spire protrusion 2.1 mm; body whorl with upper lip of aperture descending to immediately below angularity; aperture subrounded, 4.7 mm wide and 4.5 mm high (excluding walls), aperture oriented obliquely at angle of 35° to vertical; umbilicus narrow, 1.7 mm wide, slightly overlapped by lower lip, contained 6.9 times in shell diameter; tightly coiled with 5.5 whorls; sutures of early whorls deeply impressed; shell surface has suffered loss of periostracum; radial ribs appear dimly on last 1/4 of embryonic whorl and continue to 1.7 whorls; thereafter appear growth wrinkles, these becoming increasingly coarser and more irregular in occurrence on body whorl, dorsally; ventral surface of body whorl smoother with a few low growth wrinkles; shell bleached, mainly white except for some tannish color on whorls 1.5 to 3 (no evidence of color bands).



FIGS. 1-3. Radiocentrum orientalis *new species.* **1** *and* **2**, *Apertural and dorsal views of holotype (11.8 mm. diameter; USNM 758820);* **3**, *Apical whorls of a paratype (scanning electron micrograph, courtesy of Dr. W. R. Roser).*

Paratypes: Only eight paratypes were secured, all smaller than the holotype and some damaged by breakage. On some of these smaller shells the riblets of the embryonic whorls, typical of the genus, are better preserved (Fig. 3).

Etymology: L. *orientalis*, of the east, in reference to the occurrence of this species farther east than other known members of the genus *Radiocentrum*.

Disposition of Types: Holotype, USNM 758820. Paratypes: University of Arizona 6258; University of Texas at El Paso 5647, 5660.

Type Locality: MEXICO, Coahuila, Mcpo. de Villa Acuna, Serranias del Burro, 29°00′30″N; 102°05′55″W. Upper end of Canon el Bonito at *ca.* 1680 m; 200 m up-canyon from a concrete stock tank *(pila);* from sediments exposed on west wall of canyon, 5-10 m above canyon floor. These sediments underlie a fan of mixed alluvium and colluvium, which has been dissected by the arroyo in the floor of the canyon. A single shell was found in sediments approximately 1.5 km up-canyon, northward, from the type locality.

Associated Fauna: Fossils associated with *R. orientalis* at the two localities noted above were the following (asterisk indicates species not found living in the area): **Cochlicopa lubrica* (Müller), **Pupilla blandii* Morse, **Vallonia gracilicosta* Reinhardt, a succineid, sp. indet., **Rabdotus dealbatus* (Say), **Discus cronkhitei* (Newcomb), *Helicodiscus eigenmanni* Pilsbry, *Retinella (Glyphyalinia) indentata paucilirata* (Morelet) and *Zonitoides arboreus* (Say). The high proportion of species not found at present in this and nearby canyons suggests a markedly different paleoenvironment. It seems likely that these snails lived during a glacial age of the Pleistocene. The present fauna has a marked affinity to that of the Sierra Madre Oriental of Mexico, to the southeast, in contrast to the fossil assemblage.

DISCUSSION

Reports of oreohelicids from Mexico have all appertained to the genus *Radiocentrum*. These records are exceptionally widely scattered. Two species have been described from Baja California Sur (Miller, 1973; Christensen and Miller, 1976), two species from northwestern Chihuahua (Pilsbry, 1948) and one species from southeastern Chihuahua (Drake, 1949). The Serranias del Burro of Coahuila are some 1000 km distant from Baja California Sur and 380 km from the type locality of *R. almoloya* (Drake), 1949, near Salaices, Chihuahua. It is likely that lack of collecting in the mountains of northern Mexico, especially of Pleistocene fossil gastropods, may account for this scattered distributional pattern. It is also possible that this is a venerable genus in Mexico and one in which rifting in the Gulf of California and uplift of the Sierra Madre Occidental (and other ranges) may relate to disjunctions in distribution.

Shells of *R. almoloya*, like those of *R. orientalis*, appear to me to be fossil. Possibly the genus *Radiocentrum* may no longer exist in the former, eastern part of its range. There seems a general pattern of extirpation of oreohelicid snails in the southeastern part of the range of the family. Thus, fossil shells, only, are known from the Sierra Rica, Tres Hermanas, Florida, Cooke, Caballo and San Andres Mountains of southern New Mexico and from the Franklin, Hueco and Guadalupe Mountains of Texas. The Sacramento Mountains of New Mexico are rich in fossil oreohelicids but the only living species there, *Oreohelix strigosa nogalensis* Pilsbry, 1939, is of restricted occurrence. All this suggests inability of these southeastern oreohelicids to adjust to regional climatic changes.

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